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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/879,114	06/13/2001	Sundeep M. Bajikar	219.40068X00	3214

7590 11/17/2004

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EXAMINER	
THOMAS, SHANE M	
ART UNIT	**PAPER NUMBER**
2186	

DATE MAILED: 11/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/879,114	BAJIKAR, SUNDEEP M.	
	Examiner	Art Unit	
	Shane M Thomas	2186	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 August 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *19 and 20* is/are allowed.

6)☒ Claim(s) *1-5,8,10-12 and 15* is/are rejected.

7)☒ Claim(s) *6,7,9,13,14 and 16-18* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 August 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5, 8, 10 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gushiken (U.S. Patent Application Publication No. 2001/0041587) in view of Okuyama et al. (U.S. Patent Application Publication No. 2002/0126408).

As per claim 1, Gushiken shows a mobile computer system in figure 1 that comprises a power management scheme for use when the system is in a mobile state - away from commercial AC power - refer to ¶6 and ¶7. Gushiken states in ¶86 that when the system is placed in a stable condition, it can request a transfer of the stored data in a buffer memory (34 figure 2A) to the data processing unit (figure 2B). The data processing unit can then store the information into a *storage device*, HDD 17 of the system. Gushiken states in ¶9 that an unstable condition arises when external vibrations are affecting the system, such as when the system is being carried. However, Gushiken does not specifically state a detection means to detect when the mobile computing system of figure 1 is in a stable or unstable condition. Okuyama teaches in ¶68 that a vibration and/or a acceleration sensor is often used to detect external shocks [causing vibration resulting in degradation to the hard disk drive] to an apparatus comprising an external electronic

appliance 13 and a magnetic disk apparatus (hard disk drive) 17 (refer to figure 4 of Okuyama). When the sensor detects an external shock (*sporatic mechanical vibration*), the data writing operation is stopped to the magnetic disk apparatus in order to protect the data ¶68.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have combined the mobile computer system of Gushiken with the teaching of a vibration and/or acceleration sensor of Okuyama in order to have been able to properly detect an external shock to the mobile computer system (unstable condition) and as a result, prevented the writing of data to the hard disk drive of the system, thereby protecting the hard disk and the data contained therein.

It would have further been obvious to one having ordinary skill in the art to have seen that a *vibration signal* would have been sent from the [sporadic] vibration sensor in order to have informed the system of Gushiken (figures 2A and 2B) of an occurrence of an --unstable-- (sporadic mechanical vibration) condition in order to have prevented the writing of data to the hard disk drive 17 at that time duration (portable computer being carried) which the vibration was occurring.

Gushiken further shows a *chipset* (I/O bridge 14 - figure 2B) that has a *storage controller* (combination of IDE controller 142 and transfer controller 33 of figure 2A), which would have limited access of the *storage device* (hard disk drive 17) in the presence of an --unstable condition--, thereby *minimizing damage* to the drive 17.

As per claim 2, Okuyama teaches the use of an --acceleration sensor-- in addition to or without a vibration sensor in ¶68. The Examiner is considering such a signal to have been able to detect a *fixed or variable acceleration* and to have generated a --signal-- that would have been

applied to the magnetic disk drive 17 (of Okuyama) to have stopped the data writing operation as described in ¶68. The Examiner is considering this --signal-- produced by the acceleration sensor to be a *position signal* since the detection of acceleration of the mobile computing system of Gushiken would have indicated the system was changing position.

As per claim 3, it could have been seen by one having ordinary skill in the art at the time the invention was made that the acceleration sensor of Okuyama would have sent the *position signal* to the *chipset* 14 (figure 2B) of Gushiken since the acceleration sensor controls when a data writing operation should be suspended to the hard disk (¶68 of Okuyama) and the chipset 14 of Gushiken controls read/write access to hard disk drive 17. More specifically, the *storage controller* (IDE controller 142 combined with transfer controller 33 of figure 2A) would have limited access to the storage device 17 to prevent damages to the storage device 17 in accordance to the *position signal* received from the acceleration sensor indication the mobile system (figures 2A and 2B of Gushiken) is in an --unstable position--, as described with the vibration signal in the rejection for claim 1.

As per claim 4, as can be seen in figure 2B of Gushiken (element 17), the storage device corresponds to a hard disk drive (HDD). Similarly, a hard disk drive is a magnetic disk apparatus (figure 4, element 17 of Okuyama).

As per claim 5, the storage controller of modified Gushiken (IDE controller 142 combined with transfer controller 33) contains a (1) --register-- in transfer controller 33 for maintaining the logic level of the operable state of the data processing apparatus (figure 2B). The Examiner is considering this --register-- to be a --set timing register-- since the transfer controller 33 must wait for the --set timing register-- (connected to control line 42) to be a --

high-- logic level before data can be transferred to the hard disk drive 17 (refer to ¶79 and ¶80). Thus the --set timing register-- *controls* the *frequency* of data transfer.

It is inherent that the storage controller of Gushkien comprises a --burst size-- register to control the amount of data that is transferred during each cycle because the data size (Mbps) is known before start-up of the mobile computer system's operating system (¶66). Further, it is necessarily inherent that the storage controller contain a register containing the transfer --burst size-- since the IDE controller portion 142 of the storage controller would have needed to know how much data was being transferred from the transfer controller 33 in order to have properly coordinated the transfer from the USB connected component of the mobile system (figure 2A).

Finally, the examiner is considering the --unstable condition-- signal from the vibration signal as being stored in another --register--, such as a latch, in order to have been able to receive notice of a *sustained vibration* and *to have completely blocked hard disk access* as taught by Okuyama in ¶68.

As per claims 8 and 15, Okuyama states in ¶69 that when the external sensor (vibration sensor and/or acceleration sensor) is used, a car navigation system may be used as the external electronic appliance (13 of figure 4) which can be seen as being connected the magnetic disk apparatus 17. Therefore, it could have been seen by one having ordinary skill in the art that that the magnetic disk apparatus 17 would have been connected to a car's navigation system 13 which had an acceleration (position) sensor attached. Neither Okuyama nor Gushiken teach implementing the position sensor as taught by Okuyama using GPS standards, but it could have been seen that the acceleration sensor would have had to be capable of receiving some form of

signal when in use by the car navigation system in order to determine whether the car was changing position.

Using GPS standards for a car navigation system are well known and accepted standards for obtaining position information. It would have been obvious to one having ordinary skill in the art to have used GPS standards when designing the acceleration sensor of Okuyama since the standards are widely used and accepted. U.S. Patent Application Publication 2003/0191581 to Ukai et al. is being cited as merely an example of using the GPS standard in a car navigation system.

As per claim 10, Gushiken shows a hard *disk drive* 17 and a processor 9 in figure 2B. The processor is equipped with an operation system (¶67) and is enabled to run in a normal mode or a --Navigation mode-- when the computer system (figures 2A and 2B) is mobile. The Examiner is considering --normal mode-- to be when the computer system is connected to commercial AC power and thus does not have to rely on battery power (¶5), and the Examiner is considering --Navigation mode-- to be when the computer system is not connected to commercial power and running off of an internal battery. Gushiken refers to the --Navigation mode-- as a waiting state that conserves battery power by keeping the computer system in a power-OFF (--idle--) state until instructed to turn ON (¶7).

The rejection for lines 6-8 follows the rejection for claim 1, lines 3-5.

The rejection for lines 9-11 follows the rejection for claim 2.

The rejection for lines 12-16 follows the rejection for claim 1, lines 6-7.

Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gushiken (U.S. Patent Application Publication No. 2001/0041587) in view of Okuyama et al. (U.S. Patent Application Publication No. 2002/0126408), as applied to claim 10, in further view of Applicant's admitted prior art.

As per claim 11, Gushiken states that BIOS-ROM 19 (figure 2B) comprises a *flash memory* that executes routines at startup as well as a utility application for controlling the ON/OFF operation of the power source 21. Gushiken shows in ¶75 and ¶79-82 how the power functions of the BIOS 19 control the power source 21 when operating in --Navigation mode-- (waiting mode), a mode not comprised in ACPI power management instructions. Gushiken does not specifically state the BIOS-ROM 19 utilizes ACPI instructions to implement various ON/OFF configurations of the mobile computer system. The Applicant states on page 2, lines 9-11 that ACPI instructions are known to *enhance power management functionality and robustness, facilitate and accelerate industry-wide implementation of power management, and create a robust interface for configuring motherboard devices*. Therefore, it would have been obvious to one having ordinary skill in the art to have combined the modified mobile computer system of Gushiken with the teaching of ACPI instruction of the Applicant in order to have saved further battery life of the system of Gushiken.

As per claim 12, the rejection follows the rejection for claim 5.

Allowable Subject Matter

Claims 6,7,9,13,14, and 16-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

As per claims 6 and 13, neither Gushiken nor Okuyama teach *setting parameters for individual transfers based on the vibration signal from said vibration sensor*. Okuyama simply teaches a vibration sensor to suspend writing data to a disk when vibrations are detected. Further, neither Gushiken nor Okuyama teach using FIFO devices [as the buffer 34 (figure 2A of Gushiken)] with the ability to set FIFO threshold levels and a set delay time.

As per claims 9,16, and 17 neither Gushiken nor Okuyama teach using the *position sensor* (acceleration sensor of Okuyama) to *trigger a mobile system to operate in a Navigation mode [utilizing a BlueTooth™ access point]*. The Navigation mode or --waiting state-- (¶7) of Gushiken is set whenever the mobile system of Gushiken is using the battery and not commercial power, and is not triggered by a sensor.

Claims 7,14, and 18 are dependent on allowable claims.

Claims 19 and 20 are allowable.

Gushiken and Okuyama do not teach receiving an indication from a vibration or position sensor which requests operation in a particular mode when *there is a presence of sustained or sporadic mechanical vibrations over a designated time duration or when there is a change in position of the mobile PC at a fixed or variable velocity or acceleration.* However, Gushiken does teach changing system settings at a chipset level (request to turn system ON based on a

received transmission complete signal - refer to ¶91). Further, this change is detected in the OS since data is then transferred from the buffer 34 (figure 2A) to the hard disk drive 17 of figure 2B. Further, once the data transfer is complete a request to turn the system back in to a --hibernation mode-- or --waiting state-- (OFF state) occurs at the chipset (OFF request) in order to not consume the battery power of the system when mobile (¶87).

Claim 20 is dependent on allowable claim 19.

Response to Amendment

As per the Applicant's amendment filed 11 August 2004:

(i) the objections to the drawings have been respectfully withdrawn hereto;

(ii) the objections to the specification have been respectfully withdrawn hereto;

(iii) the objections to claims 6,7,13,14, and 17- 20 have been respectfully withdrawn hereto;

(iv) the rejections of claims 8,9,15, and 16, under §112, second paragraph, have been respectfully withdrawn hereto;

(v) the rejections of claims 1-5, 8, 10 and 15 under § 103(a) as being unpatentable over Gushiken in view of Okuyama et al. have been maintained;

(vi) the rejections of claims 11 and 12 under §103(a) as being unpatentable over Gushiken in view of Okuyama et al. in further view of Applicant's admitted prior art have been maintained.

Response to Arguments

Applicant's arguments filed 11 August 2004 have been fully considered but they are not persuasive.

Applicant states on page 13 of the present amendment that when commercial power is not being supplied to the laptop of Gushiken, communication with the HDD is prevented. This is not necessarily true. Guskiken defines in ¶¶ 74-75 that a non-operable state is a power OFF state in order for the system to save battery pack life. Thus a non-operable state occurs when (a) the system is mobile and (b) when the mobile system is off. Gushiken further teaches in ¶¶79-82 a method for storing information received by the buffer memory and transmitted it to the HDD when the system is in a non-operational mode. Thus it can be seen that information can be transmitted to the HDD even when commercial power is not supplied to the system. While the Examiner did admit and the Applicant further pointed out, Gushiken does not specifically teach a method to discern an *unstable* condition from a *stable* condition, which are different from an operable condition (system is on) and a non-operable condition. Gushiken states in ¶85 that when carrying the computer, it is possible to prevent transmission from the buffer memory to the hard drive in order to prevent damage from vibrations. Further, Gushiken states in ¶84 that it is possible to store all of the transferred information from the antenna to into the buffer memory as long as the amount of transferred information does not exceed the capacity of the buffer memory. Therefore it would have further been obvious to one having ordinary skill in the art at the time the invention was made to have combined the system of Gushiken with the vibration sensor teaching of Okuyama in order to have been able to transfer data from the buffer memory to the disk drive during a period of operability when the system of Gushiken was in a mobile mode (not connected to commercial AC power) and in need of transferinge data from the buffer to the HDD in order to prevent a buffer

overflow resulting in lost data. It follows that the vibration sensor of Okuyama could have detected vibrations due to outside shock (from carrying), which could have possibly damaged the drive, during this transmission to prevent buffer overflow.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Gushiken only teaches a method to detect when commercial AC power is not connected to a system and a system is off when transmission from the buffer to the hard drive is scheduled to occur (¶¶79-82). Gushiken states in ¶109 that an example of an unstable state is when the system is being carried, but does not specifically disclose how to detect such an unstable state. Gushiken sites motivation to combine the reference of Okuyama in ¶86, stating that when a stable condition is established, data may be transferred from the buffer memory to the hard drive. Therefore, it would have been obvious to combine the system of Gushiken with a reference that teaches a method or system to detect such an unstable condition. The reference of Okuyama teaches just that.

As per Applicant's argument on page 14 of the amendment, which states that "features of the claims are wholly missing from the pending claims. ... None of these features are found in the Gushiken or Okuyama references taken individually or in combination," the Examiner's non-final rejection filed 11 February 2004 discusses the claimed limitations and how the references of

Gushiken and Okuyama apply to them on page 3. Further, the rejections of claims 1-5, 8, 10-12, and 15 are found above.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kikuta et al. (U.S. Patent Application Publication No. 2002/0027733) teaches a disturbance detection circuit to distinguish between harmless vibrations and a harmful shock to a magnetic disk device.

Kisaka et al. (U.S. Patent No. 6,754,021) teaches outputting a shock signal if an acceleration sensor exceeds a predetermined threshold.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shane M Thomas whose telephone number is (571) 272-4188. The examiner can normally be reached on M-F 8:30 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt M Kim can be reached on (571) 272-4182. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Shane M. Thomas

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